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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,399	10/16/2001	Tatsuya Kawahara	77661/57	3063

7590

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EXAMINER

HODGE, ROBERT W

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Period for Reply

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10,19,25,29,34 and 37 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10,19,25,29,34 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed 3/17/06, with respect to the rejection of claims 10, 19, 25 and 29 under 35 U.S.C. 112, second paragraph have been fully considered and are persuasive. The rejection of claims 10, 19, 25 and 29 has been withdrawn.
2. In light of applicants' statements regarding the rejection under 35 U.S.C. 112, second paragraph, applicants have stated, "the Examiner's own remarks indicate that the Examiner understands the claims". Therefore applicants have admitted on the record that as stated by the Examiner in the previous office action that, if a multilayer structure is present with different types of materials it is inherent that the different layers are going to be different in strength and adhesiveness and any multilayered structure with different types of materials as the layers reads on the claims as so recited.
3. Applicant's arguments filed 3/17/06 have been fully considered but they are not persuasive. Applicants state that the Kato reference does not disclose a "carbonized binder". However as defined by applicants a "carbonized binder" is a binder that includes a carbon powder and the Kato reference teaches a fluororesin containing carbon black, which is a powder (column 3, lines 3-4). Applicants further state that the Kato reference does not teach a multi-layer structure of the water-repellant layer that is formed with two kinds of binders. However the Kato reference clearly states that a water-repellency binder treatment can first be performed to the carbon fiber woven cloth and then coated again with a different water-repellant binder (column 4, lines 15-56).

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As discussed above because multiple materials are disclosed in a multilayered structure different adhesiveness and strength will be present in the different layers with one being more rigid than another.

4. As previously stated claims 34 and 37 are product-by-process claims and as such applicants should be aware that in a product by process claim, applicants must show that the process materially alters the product to overcome a rejection made on the product by the prior art, which show the product is known. Furthermore amended claims 10 and 19 now contain product-by-process limitations as well.

5. Therefore all prior art rejections will be maintained.

6. The examiner acknowledges that claims 1-9, 11-18, 20-24, 26-28, 30-33, 35, 36, 38 and 39 have been canceled and any rejection of those claims is now moot.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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8. Claims 10, 25, 29, 34 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato JP 10261421 (U.S. Patent No. 6,127,059 is used as the English translation) hereinafter referred to as Kato.

9. Kato teaches a diffusion layer with at least a base layer (abstract lines 1-2) that has a water-repellent layer (abstract line 15, column 3, line 13 and column 4 line 15 et seq). Kato also teaches "a carbonized yarn of woven fabric [column 3, lines 39-42 and lines 46-47], and a carbonized binder impregnated into the yarn [column 4, lines 15 et seq]". It is inherent that a binder that is impregnated into a woven yarn would connect the filaments of the yarn together. Kato further teaches a non-woven base layer (column 6, lines 51 and 66) with a synthetic resin binder impregnated into it (column 5, lines 50-52), it being pressed (column 5, line 9) and carbonized (column 3, lines 39-42 and lines 46-47). Kato also teaches a base layer having opposite surfaces (column 6, line 34 and claim 6), that the water-repellent layer is a mixture of carbon and synthetic resin (column 4, lines 15-16 and claim 4), and that the water-repellent layer is multi layered (column 1, lines 15 et seq). It is inherent that multiple layers would have different adhesive properties especially if they are applied to the substrate under different conditions such as disclosed by Kato (column 1, lines 29-31 or column 6 lines 4-8). Kato further teaches the use of two kinds of binders (column 4, lines 50-56). The examiner notes that of the materials disclosed by Kato, the order of use determines which material will have a higher rigidity. The examiner notes that the use of the phraseology "higher rigidity" is relative to the materials at hand and can change with any reference. And since there is no recitation in claim 29 what a first or second

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material would be, the Kato reference reads on the claim as so recited. The examiner further notes that all of the materials listed in the Kato reference have some sort of adhesive properties. Kato also teaches solidifying the carbon and synthetic resin mixture (column 5, lines 9-10) and the presence of filaments (column 5, line 46).

10. The examiner notes that claims 34 and 37 are product-by-process claims and claim 10 has product-by-process limitations. "Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps". See MPEP § 2113. Therefore because all of the structure recited in claims 10, 34 and 37 are present in the Kato reference, claims 10, 34 and 37 are included in the above 102(b) rejection.

11. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Beattie et al U.S Patent No. 6,667,127 hereinafter referred to as Beattie et al.

12. Beattie et al. teaches a diffusion layer with at least a base layer that is made from a non-woven carbon paper made from carbon fibers (column 6, lines 56-57), a synthetic carbonized resin binder that is non-uniformly impregnated therein (column 6, lines 63-67, column 8, lines 66-67, column 8, line 51 and column 9, line 31), that the layers on the base layer would be differing in the amount binder used (column 9, lines 56-64 and claim 33) and a rigid portion of the base layer would be present (column 9, lines 61-62 and column 11, line 13).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Hodge whose telephone number is (571) 272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RWH 4-26-06

A handwritten signature in black ink, appearing to read "Michael Barr", with a long horizontal stroke extending to the right.

MICHAEL BARR
SUPERVISORY PATENT EXAMINER